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92. Proposed by M. A. GRUBER, A. M., War Department, Washington, D. C.

Find the sides of integral right triangles when the difference of the legs is given.

*** Solutions of these problems should be sent to J. M. Colaw not later than Dec. 10.

AVERAGE AND PROBABILITY.

115. Proposed by L.C.WALKER, A.M., Assistant Professor of Mathematics, Leland Stanford Jr. University, Palo Alto, Cal.

Three points are at random within a given triangle. Find the chance that they will all lie on one side of some one line that can be drawn through the center of gravity of the triangle.

116. Proposed by the late ENOCH BEERY SEITZ,

The average area of the quadrilateral formed by joining four radom points on the surface of a circle, radius a, is $\frac{4a^2}{3\pi}$.

*** Solutions of these problems should be sent to B. F. Finkel not later than Dec. 10.

MISCELLANEOUS.

117. Proposed by W. J. GREENSTREET, M. A., Editor of The Mathematical Gazette, Stroud, Gloucestershire, England.

If $x\cos\alpha+y\cos\alpha=a\cos\theta+b\cos\varphi$, and $x\sin\alpha+b\sin\varphi=y\sin\alpha+a\sin\theta=\kappa$, find the maximum value of κ, and the values of x and y.

118. Proposed by O. W. ANTHONY, New York, N. Y.

If f is determined by the equation $f(\mu\nu)=f(\mu)f^{-1}(\nu)+f(\nu)f^{-1}(\mu)$, when f^{-1} is the inverse of f, show that $f[(2)^\mu]=\frac{k^{\mu+1}}{2^{\mu+1}}$, where k is the constant.

*** Solutions of these problems should be sent to J. M. Colaw not later than Dec. 10.

BOOKS AND PERIODICALS.

Annals of Mathematics. Published under the auspices of Harvard University. Second series, Vol. 2, No. 4. Price, $2.00 per year in advance. Published in October, January, April, and July.

The July number of the current year contains the following articles: Concerning du Bois-Reymond's Two Relative Integrability Theorems, by Professor E. H. Moore; On a Theorem of Kinematics, by Dr. P. Saurel; The Collineations of Space whichTrans forms a Non-Degenerate Quadratic Surface into Itself, by Dr. R. G. Wood; Note on Multiply Perfect Numbers, by Dr. J. Westlund; The Isoperimetrical Problem on Any Surface, by Mr. J. K. Whitmore; On a Surface of the Sixth Order which is Touched by the Axes of all Screws Reciprocal to Three Given Screws, by Professor E. W. Hyde; Note Sur l' évalution d'une intégral define, Par le Professor D. Sintsof. B. F. F.

The American Journal of Mathematics. Published under the auspices of the Johns Hopkins University and edited by Frank Morely with the coöperation of other mathematicians. Price, $5.00 per year in advance.

The October number contains the following articles: Memoir on the Algebra of